Elaine McCluskey

From: Elaine McCluskey [mccluskey@fnal.gov]

Sent: Monday, October 04, 2004 3:27 PM

To: 'Larry L. Hammond'; 'Steve Krstulovich'; Bill Foster; Chuck Federowicz; David Finley; Dixon Bogert; Duane Plant; Ed Crumpley; fgarcia@fnal.gov; Rich Stanek; Shekar Mishra; 'Steve Geer'; Tom Lackowski; Vic Kuchler; Weiren Chou

Subject: Notes from 9/29/04 Linac Proton Driver Meeting - Civil

NO MEETING ON 10/6/04 DUE TO PROTON DRIVER WORKSHOP – NEXT MEETING WILL BE 10/13/04 IN conFESSional AT 9:30 A.M.

Attendees: Bill Foster, Weiren Chou, Fernanda Garcia, Steve Krstulovich, Lee Hammond, Dixon Bogert, Vic Kuchler, Duane Plant, Rich Stanek, Elaine McCluskey

Items discussed:

1. Cooling - Steve and Lee outlined the following using drawings and tables they had prepared:
    a. MI Upgrade: 3.56 acres of cooling pond is necessary for 2MW increase. Could be at either MI-60 or combination of MI30/MI60. This also requires a new pump vault. Cost estimated at $50k/acre 8 years ago, or probably today at $0.5M for this work scope. Not enough capacity at Central Utility Building for all cooling to be provided from there – also require new infrastructure in piping, etc.
    b. Linac: new information from meeting on 9/24/04 meant that only 10 MW total cooling required for 2MW machine. This can all be done from Central Utility Building. Conclusion is for 0.5 MW machine, no additional equipment is required at CUB. For 2 MW machine, add 2 chillers (remove existing boilers) and add 2 cooling towers, total estimated cost for this based on UIP chiller/cooling tower costs is $3M total.
2. Cooling scenario for Synchrotron – need numbers from Cezary Jach and Weiren to properly include this
3. AC power draw from Steve/Lee numbers – appears when existing linac/booster go away the current 5MW power draw will be reduced, which may be a cost savings.
4. Dump - reviewed layout at injection (MI-10). Conclusion – needs to be outside existing tunnel. May need to have angle > 40 mradians. Discussed possible interferences with MiniBoone retention wall and construction issues. Bill asked if existing Linac dump is comparable? No, because power of existing Linac < PD Linac, implies length difference. Dixon volunteered to visit MI10 area to investigate existing conditions.
5. Occupancy during beam on condition in Tevatron – concluded that there would be no entrance into Tevatron when PD is running.
6. Reviewed discussion regarding groundwater issues Elaine & Chuck had with Rod Walton and Paul Kesich on 9/24/04. Paul said that groundwater issues are potentially larger than wetlands and that if funds are identified this year to look at PD environmental issues, maybe they should be spent on borings. This could be combined with desired borings for structural/construction issues as well. Possible concerns about old CUB tile field used for sewage treatment – remaining chlorides in soil would have to be managed.
7. Also discussed existing drain tile fields left from farmers – if possible to identify these up front, could put reconnection of these in the construction contract, otherwise will have to be prepared to have contingency identified to take care of what is found during construction.
8. Transport line layout – Weiren's input to Chuck produced a line that's a mirror image of what's needed. Weiren will get Chuck new numbers by Monday for replotting.

ITEMS FOR NEXT WEEK:
Further information about the dump location.

ACTION ITEMS:
Elaine will talk with Bob Lootens from FESS/Services about possible old tile field maps that may exist.
Elaine will investigate with ESH possible affect on MI/NuMI EA's from upgrade to 2MW machine.
Weiren will get Chuck new Transport Line location information.
Weiren will get power/cooling information for Synchrotron scenario.

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